

REMARKSA. Background

Claims 1-39 were pending in the application at the time of the Office Action. Claims 29-35, 38, and 39 were rejected as being obvious over cited prior art. Claims 1-28, 36, and 37 were either allowed or objected to as being dependent upon a rejected base claim. By this response applicant has amended claim 29 and added new claims 40-45. As such, claims 1-45 are presented for the Examiner's consideration in light of the following remarks.

B. Proposed Claim Amendments

Applicant has herein amended claim 29 and added new claims 40-45. Claim 29 has been amended to recite that the feed material is comprised of oil shale and to clarify that each discrete stream of oil vapor is collected and removed from the heating chamber at vertically spaced apart locations. Claim 29 has also been amended to clarify that the discrete streams of oil vapor are separately condensed "without mixing the discrete streams together." New claims 40 and 41 depend from claim 29. Applicant respectfully submits that the amendments to claims 29 and new claims 40 and 41 are supported by the application as originally filed.

New claim 42 is a combination of original claims 29 and 36. New claims 43-45 depend from claim 42 and are primarily supported by prior pending claims 37-39.

In view of the foregoing, applicant submits that the claim amendments do not introduce new matter, and entry thereof is respectfully requested.

C. Rejection on the Merits

Paragraph 1 of the Office Action provisionally rejects claims 29-39 under the judicially created doctrine of double patenting over claims 52-62 of co-pending Application No. 10/767,838. Applicant notes that only a few of the claims of the present application are provisionally rejected under double patenting in view of a few of the claims in the '838 application. As such, applicant respectfully requests that double patenting rejection be withdrawn from the present application and be applied in the '838 application for which applicant has not yet received an Office Action. Although applicant is willing to file a terminal disclaimer, applicant's concern is that should it file a terminal disclaimer at this stage, and claims 52-62 of the '838 application not ultimately be allowed, applicant would have unnecessarily filed the terminal disclaimer to its detriment.

Paragraphs 2 and 3 of the Office Action reject claims 29-35 under 35 USC § 103(a) as being obvious over U.S. Patent No. 4,948,468 to Reeves et al. The Office Action asserts that Reeves et al. does not "teach collecting a plurality of discrete streams of the oil vapor omitted from the feed material within the heating chamber, each discrete stream being collected along a different elevational section of the heating chamber and separately condensing each discrete stream of oil vapor." The Office Action, however, asserts that "it is well established in the petroleum refining art to separate various hydrocarbon fractions in a refining process and condensing the fractions as discrete and separate fractions or blends of other fractions, it would have been obvious to have modified the methods of Reeves et al. such that the result and vapor streams resulting from a retort process are separated and condensed as claimed. One of ordinary skill would have been motivated by the desire to provide on site refining means." Applicant respectfully submits that it would not have been obvious to modify the Reeves patent as suggested in the Office Action because such a

modification would in part destroyed the intended function and operation of the Reeves system and because there is no enabling disclosure as to how to make such a modification.

The Reeves patent discloses an oil shale retort apparatus. In general, as depicted in Figure 1, the Reeves retort apparatus comprises a vertical kiln 23 through which a bed of oil shale 25 vertically downwardly passes. Disposed within kiln 23 are distributors 27 and 29 from which heated gas is dispersed into the shale. The Reeves patent discloses that the "heated gas delivered by the distributors 27 and/or 29 in the indirect heated retort rises through the descending bed and heats the rock to its destructive distillation temperature." Column 8, lines 58-62.

The Reeves patent goes on to explain that the

upwardly flowing gases and the oil vapor mix together and flow upwardly through the rock chimneys 69, 70, 71, 72 past the descending shale. As the gas and oil vapor flow upwardly, the vapor is cooled and at the same time the descending shale is preheated. When operating under preferred conditions, at approximately 700 °F., a significant portion of the oil vapor condenses to a mist and the gas and entrained oil mist continues to journey upward. With further cooling, additional portions of the oil vapors condense as an oil mist.

Column 11, lines 65-68 and column 12, lines 1-7.

As depicted in Figure 5, the Reeves patent discloses a single collection chamber 73 through which all of the gas and oil vapors are collected. The collection chamber 73 is in part formed by a roof panel 77 covering the chamber of kiln 23 near the top thereof. As the heated gas and oil vapors rise within kiln 23, they are stopped by roof panel 77 and then laterally drawn out of vertical kiln 23 through take-offs 83 and 85.

The kiln of the Reeves patent is thus designed to operate as a result of heated gas flowing up through the oil shale so that the heated gas heats the oil shale in the combustion zone causing it to emit oil vapor. The heated gas and oil vapor continue to ascend up through the oil shale bed so as to preheat the oil shale as it descends to the combustion zone while simultaneously cooling the oil

vapor for subsequent condensation. In view of the foregoing, applicant respectfully submits that it would not be obvious to collect and remove the oil vapor from the chamber of the Reeves kiln at a plurality of vertically spaced apart locations along the kiln because in so doing the heated gas would be removed with the oil vapor. Once the heated gas and oil vapor are removed, they could no longer function to heat or preheat the oil shale above the location from where they were removed. Such heating and/or preheating of the oil shale by the gas and oil vapor is necessary for the functioning or at least operational efficiency of the Reeves system. Likewise, early removal of the oil vapor results in the oil vapor not being properly cooled. As a result, additional energy or time would be required to condense the oil vapor, thereby again decreasing operational efficiency.

Furthermore, the Reeves kiln operates by forming a roof at the top of the kiln which collects all of the gas and oil vapor. Applicant respectfully submits that there is no enabling disclosure in the Reeves patent as to how one could modify the Reeves kiln to collect oil vapor at a variety of vertically spaced apart locations along the kiln.

In view of the foregoing, applicant respectfully submits that it would not be obvious to modify the Reeves kiln to collect "a plurality of discrete streams of the oil vapor emitted from the feed material within the heating chamber, each discrete stream being collected and removed from the heating chamber at vertically spaced apart locations of the heating chamber" and "separately condensing each of the discrete streams of oil vapor without mixing the discrete streams together," as recited in claim 29. As such, applicant respectfully requests that the obviousness rejection be withdrawn.

Claims 30-41 depend from claim 29 and thus incorporate the limitations thereof. As such, applicant respectfully submits that claims 30-41 are not obvious over the cited prior art for at least the same reasons as discussed above with regard to claim 29.

Furthermore, applicant respectfully submits that many of the dependent claims are independently distinguishable over the cited prior art. For example, because the Reeves patent only discloses emitted a single collection of oil vapor, applicant respectfully submits that the Reeves patent does not disclose or suggest that each discrete stream of oil vapor comprises "at least 60% by volume a primary grade of oil vapor," as recited in claim 31. In addition, because the Reeves patent discloses heating of the oil shale by passing up a heated gas within the kiln, the Reeves patent does not disclose or suggest "a plurality of vertically and horizontally spaced apart baffles disposed within the heating chamber, the baffles being heated so as to heat the feed material within the heating chamber as the feed material passes by the baffles," as recited in claim 40. Likewise, the Reeves patent does not disclose the step of "collecting at least three discrete streams of oil vapor," as recited in claim 41.

Paragraph 4 of the Office Action rejects claims 38 and 39 under 35 USC § 103(a) as being obvious over the Reeves patent in view of U.S. Patent No. 4,601,812 to Anderson et al. Claims 38 and 39 both depend from claim 29 and thus incorporate the limitations thereof. Applicant submits that Anderson does not cure the deficiencies discussed above with regard to claim 29 in view of Reeves. As such, applicant submits that claims 38 and 39 are not obvious over the cited prior art for at least the same reasons as discussed above with regard to claim 29.

Paragraph 5 of the Office Action states that claims 1-28 were allowable. As such, these claims are not discussed herein. Paragraph 5 also states that claims 36 and 37 would be allowable if rewritten to overcome the rejections as provided in the Office Action. Claim 36 depended directly from claim 29. By this response, applicant has added new claim 42 which is a combination of original claims 29 and 36. As such, applicant respectfully submits that claim 42 is allowable for at least the same reasons that claim 36 was considered to be allowable in the Office Action.

New claims 43-45 depend from claim 42 and thus incorporate the limitations thereof. As such, applicant respectfully submits that claims 43-45 are allowable for at least the same reasons as discussed above with regard to claim 42.

D. Conclusion

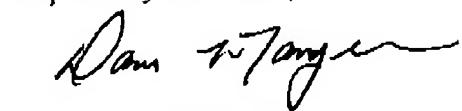
Applicant notes that this response does not discuss every reason why the claims of the present application are distinguished over the cited prior art. Most notably, applicant submits that many if not all of the dependent claims are independently distinguishable over the cited prior art. Applicant has merely submitted those arguments which it considers sufficient to clearly distinguish the claims over the cited prior art.

In view of the foregoing, applicant respectfully requests the Examiner's reconsideration and allowance of claims 1-45 as amended and presented herein.

In the event there remains any impediment to allowance of the claims which could be clarified in a telephonic interview, the Examiner is respectfully requested to initiate such an interview with the undersigned.

Dated this 7 day of December 2005.

Respectfully submitted,



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